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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/508,449	09/20/2004	Friedrich Georg Schmidt	258151USOX PCT	6717
22850 7590 01/16/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER CHOI, LING SIU	
			ART UNIT 1713	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS		MAIL DATE 01/16/2007	DELIVERY MODE PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/508,449	<b>Applicant(s)</b> SCHMIDT, FRIEDRICH GEORG	
	<b>Examiner</b> Ling-Siu Choi	<b>Art Unit</b> 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/20/2004</u> | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office Action is in response to the Preliminary Amendment filed September 20, 2004. Claims 1-12 are now pending, wherein claims 1-8 are drawn to a cationic polymer and claim 12 is drawn to a process to prepare the cationic polymer; and claims 10-12 are drawn to a polyelectrolyte, an additive, and an optical component respectively.

#### ***Claim Rejections - 35 USC § 112***

2. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

**The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.**

3. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 3, the recitation "which comprise an amidinium group, with the cyclic nonaromatic units" causes indefiniteness because it appears that the recitation is redundant.

#### ***Claim Rejections - 35 USC § 102***

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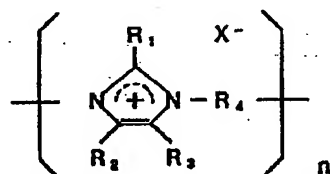
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7 and 11 rejected under 35 U.S.C. 102(b) as being anticipated by Nakanishi et al. (JP 05-165258).

Nakanishi et al. disclose a polymer having quaternary salt as a charge controlling agent or toner, which is represented by the following formula:



wherein R<sub>1</sub> is a hydrogen atom or C<sub>1-17</sub> hydrocarbon group; R<sub>4</sub> is an C<sub>1-12</sub> alkylene; X is iodine, nitrate, sulfate, or phosphorate (abstract; [0011]). Thus, the present claims are anticipated by the disclosure of Nakanishi et al.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

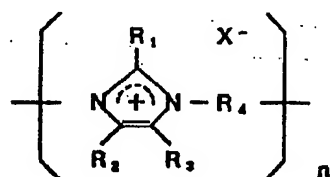
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

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said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al. (JP 05-165258) in view of Hara et al. (JP 11-176237).

Nakanishi et al. disclose a polymer having quaternary salt as a charge controlling agent or toner, which is represented by the following formula:



wherein  $R_1$  is a hydrogen atom or  $C_{1-17}$  hydrocarbon group;  $R_4$  is an  $C_{1-12}$  alkylene; X is iodine, nitrate, sulfate, or phosphate (abstract; [0011]).

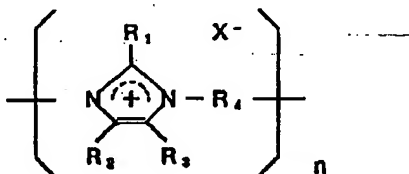
The difference between the present claim and the disclosure of Nakanishi et al. is the requirement of the cationic polymer to be used as a polyelectrolyte in a battery or a solar cell.

Hara et al. disclose a solid polymer electrolyte for lithium secondary battery, comprising a polyvinyl imidazolinium compound and a metal salt, wherein a counter ion of polyvinylimidazolinium is chloride ion, bromide ion, or iodide ion (abstract; [0016]). Thus, a polymer having imidazolinium compound can be used as the polymer polyelectrolyte in battery. Since the cationic polymer disclosed by Nakanishi et al. has the imidazolinium, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the cationic polymer disclosed by Nakanishi et al. as the polyelectrolyte in battery and thereby obtain the present invention.

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8. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al. (JP 05-165258) in view of Ford (US 5,401,808).

Nakanishi et al. disclose a polymer having quaternary salt as a charge controlling agent or toner, which is represented by the following formula:



wherein  $R_1$  is a hydrogen atom or  $C_{1-17}$  hydrocarbon group;  $R_4$  is an  $C_{1-12}$  alkylene; X is iodine, nitrate, sulfate, or phosphate (abstract; [0011]).

The difference between the present claim and the disclosure of Nakanishi et al. is the requirement of the cationic polymer to be used as a an optical component or an additive.

Ford discloses a terpolymer comprising randomly linked units of vinylammonium formate, N-vinylformamide, and amidine (claims 1-2). Ford further disclose that the terpolymer can be used in ion exchanging, reactive sizing, and anti-static service because amidine is a stronner base than amine (col. 6, lines 19-24), wherein "anti-static service" reads on additive and "sizing" reads on optical component. Since the cationic polymer disclosed by Nakanishi et al. has the imidazolinium, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the cationic polymer disclosed by Nakanishi et al. as the additive or optical component and thereby obtain the present invention.

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9. Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114.



LING-SUI CHOI  
PRIMARY EXAMINER

January 3, 2007